

USER GUIDE
TO
1:250,000 SCALE LUNAR MAPS

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GENERAL

In 1972 the NASA Lunar Programs Office initiated the Apollo Photographic Data Analysis Program. The principal point of this program was a detailed scientific analysis of the orbital and surface experiments data derived from Apollo missions 15, 16, and 17. One of the requirements of this program was the production of detailed photo base maps at a useable scale.

NASA in conjunction with the Defense Mapping Agency (DMA) commenced a mapping program in early 1973 that would lead to the production of the necessary maps based on the need for certain areas.

This paper is designed to present in outline form the necessary background information for users to become familiar with the program.

MAP FORMAT

The scale chosen for the project was 1:250,000^{*}. The research being done required a scale that Principal Investigators (PI's) using orbital photography could use, but would also serve PI's doing surface photographic investigations.

Each map sheet covers an area four degrees north/south by five degrees east/west. The base is compiled from vertical Metric photography from Apollo missions 15, 16, and 17. In isolated instances the Apollo oblique metric, Apollo panoramic, and Lunar Orbiter photography were used to fill small gaps or to extend imagery to include features that were the basis for sheet names. Figures 1 and 2 illustrate the area covered by the vertical metric photography.

The numbering system for the series is based on the existing 1:1,000,000 Lunar Astronautical Charts (LAC). Each LAC Region is divided into four provinces lettered A, B, C, or D. Each province is then divided into quarters numbered 1, 2, 3, or 4. The sheet number for each 1:250,000 scale map consists of the LAC number, a province letter, and the number of the quarter. The following "Sheet Numbering Guide" illustrates LAC 58 subdivided into its corresponding 1:250,000 scale map sheets.

* A scale statement like this simply means 1 unit of measure on the map equals 250,000 of the same units on the moon. (1" on the map equals 250,000" on the moon).

NEAR SIDE

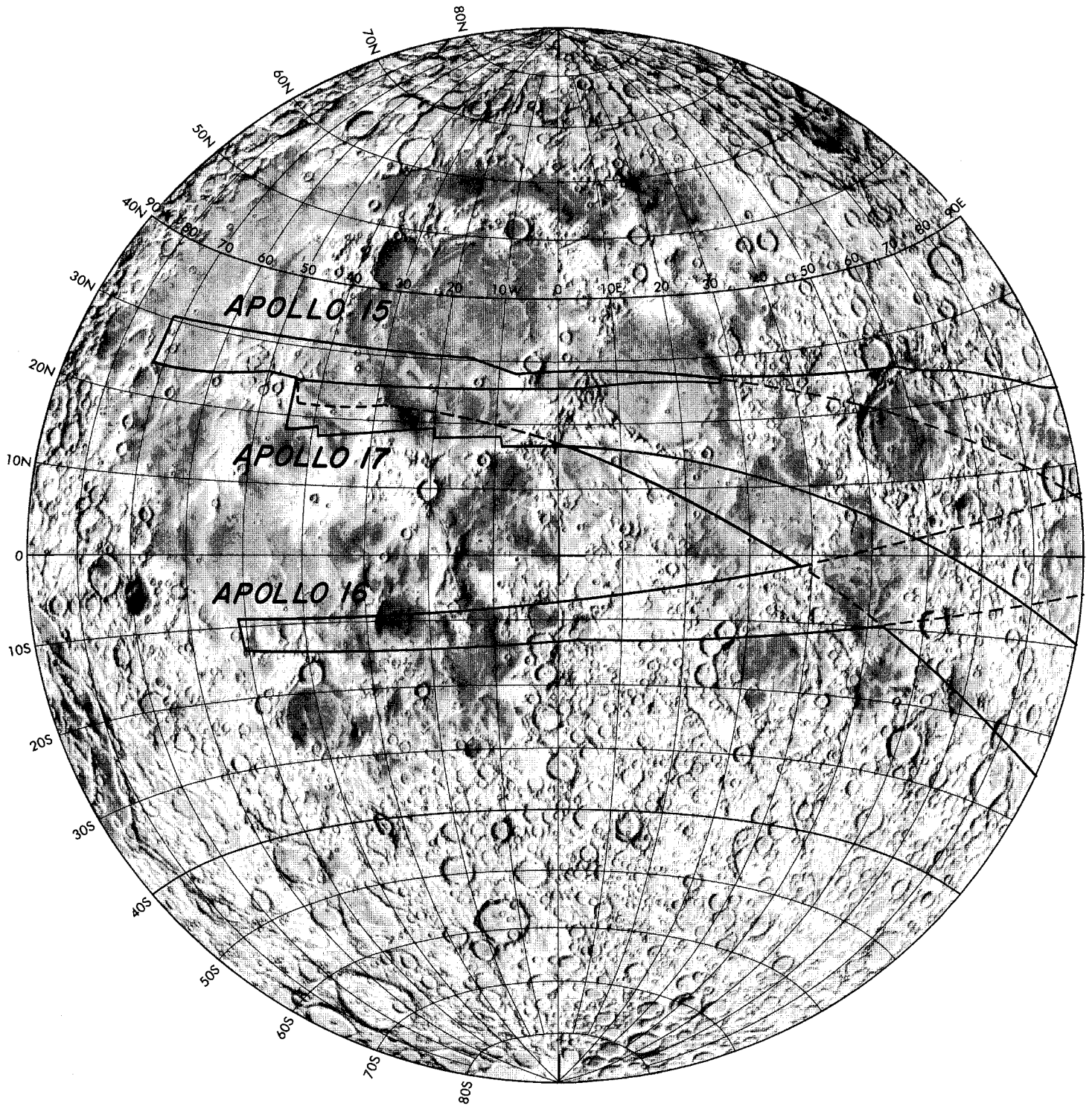


FIGURE 1

FAR SIDE

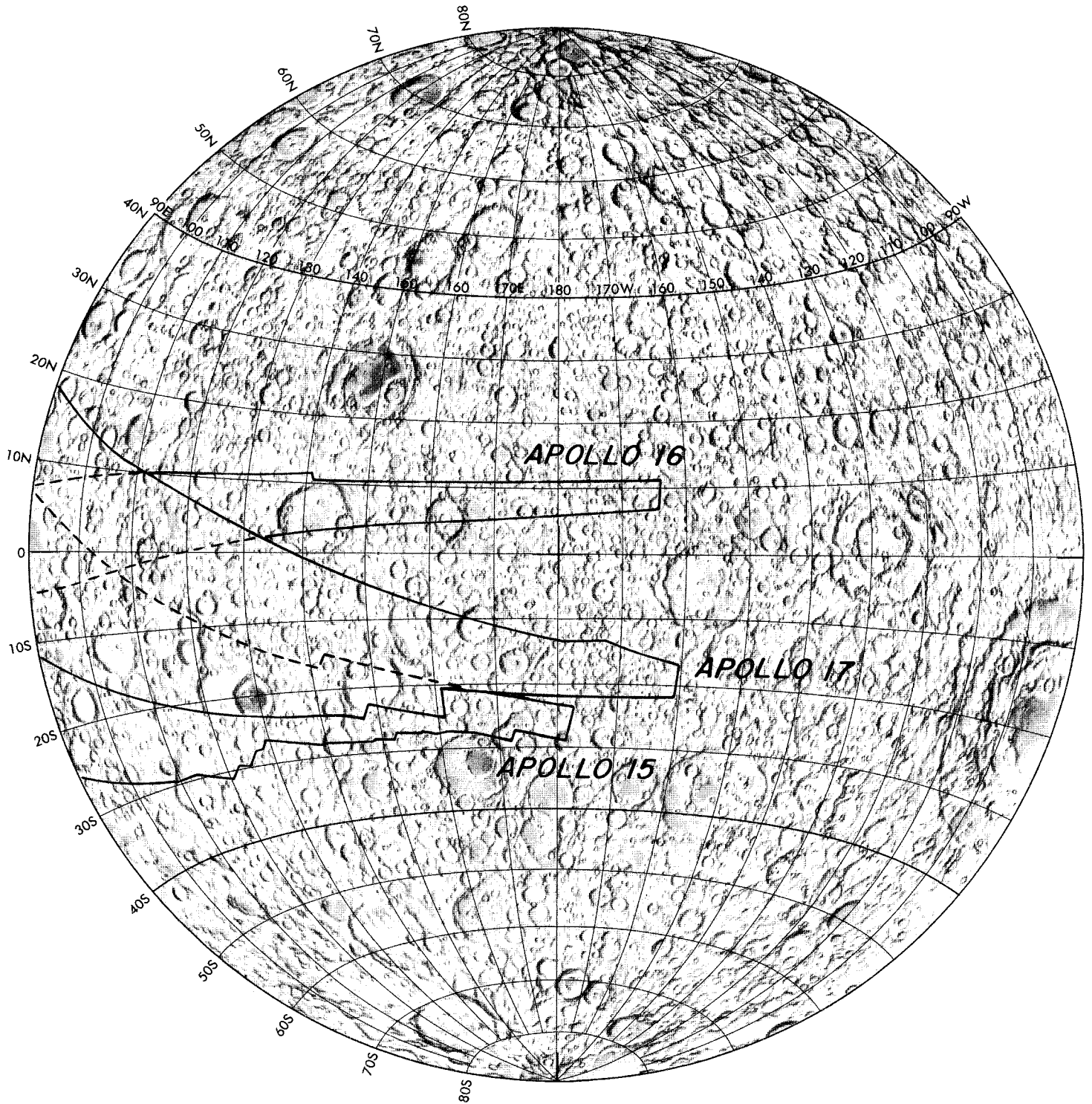


FIGURE 2

SHEET NUMBERING GUIDE

1	2	1	2
A		B	
4	3	4	3
58			
1	2	1	2
D		C	
4	3	4	3

Figures 3 and 4 locate the 1:250,000 scale maps published through January 1975. Table 1 gives map name in numerical order, and Table 2 gives map name in alphabetical order.

Each 1:250,000 scale map sheet is available in two forms:

1. Lunar Topographic Orthophotomap (LTO)
2. Lunar Orthophotomap (LO)

The basic photographic coverage for the LTO and LO maps is the orthophotomosaic. The LTO contains the grid, names data, and relief represented by contours, elevations, and other relief symbolization as required. The LO contains only the orthophotomosaic base with exterior grid ticks and values.

Map sheets published after 1 May 1974 have lines of longitude numbered 0° to 360° east. Latitude will still be measured in degrees North or South of the equator. A "conversion table" (Table 3) is included to illustrate the new procedure.

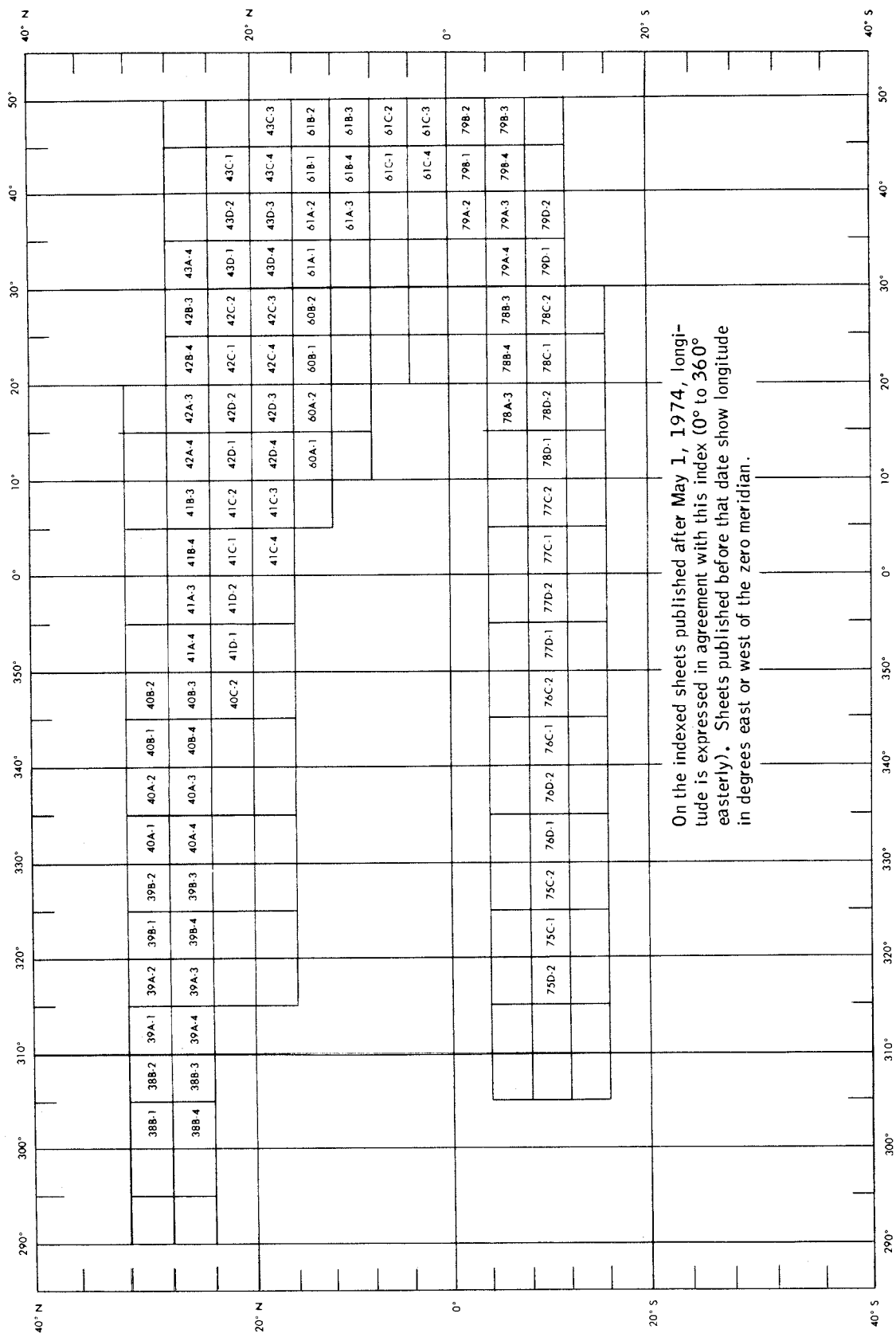


FIGURE 3

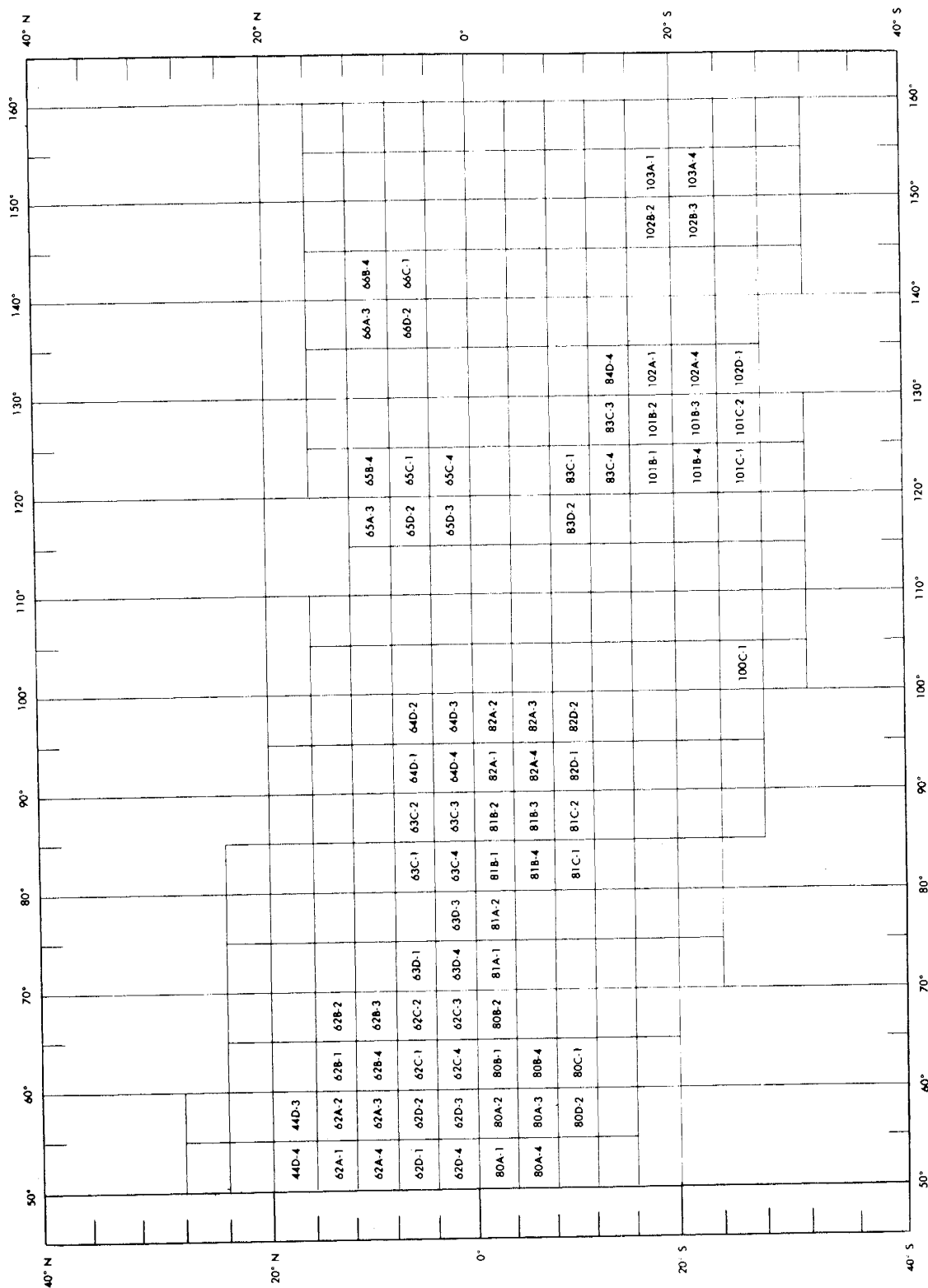


FIGURE 4

LUNAR TOPO-ORTHOPHOTOMAPS - 1:250,000 SCALE

38B-1	Humason	42C-1	Deseilligny	62A-2	Curtis
38B-2	Nielsen	42C-2	Clerke	62A-3	Shapley
38B-3	Freud	42C-3	Dawes	62A-4	Tebbutt
38B-4	Zinner	42C-4	Brackett		
				62B-1	Fahrenheit
39A-1	Krieger	42D-1	Hornsby	62B-2	Condorcet
39A-2	Angström	42D-2	Bessel	62B-3	Krogh
39A-3	Prinz	42D-3	Menelaus	62B-4	Auzout
39A-4	Väisälä	42D-4	Sulpicius Gallus	62C-1	Firmicus
39B-1	Fedorov			62C-2	Dubyago
39B-2	Delisle	43A-4	leMonnier	62C-3	Pomortsev
39B-3	Diophantus			62C-4	Condon
39B-4	Artsimovich	43C-1	Hill		
		43C-3	Proclus	62D-1	Abbot
40A-1	Caventou	43C-4	Carmichael	62D-2	Daly
40A-2	McDonald			62D-3	Ameghino
40A-3	Lambert	43D-1	Littrow	62D-4	Smithson
40A-4	LaHire	43D-2	Franck		
		43D-3	Theophrastus	63C-1	Knox-Shaw
40B-1	Sampson	43D-4	Vitruvius	63C-2	Tachinni
40B-2	Landsteiner			63C-3	Peek
40B-3	Kovalevskij	44D-3	Eckert	63C-4	Schubert
40B-4	Heinrich	44D-4	Peirce		
				63D-1	Boethius
40C-2	Pupin	60A-1	Daubree	63D-3	Nobili
		60A-2	Auwers	63D-4	Respighi
41A-3	Spurr				
41A-4	Beer	60B-1	Plinius	64D-1	Nunn
		60B-2	Jansen	64D-2	Erro
41B-3	Joy			64D-3	Fox
41B-4	Hadley	61A-1	Cajal	64D-4	McAdie
		61A-2	Lucian		
41C-1	Conon	61A-3	Cauchy	65A-3	Guyot
41C-2	Galen				
41C-3	Bowen	61B-1	Lyell	65B-4	Recht
41C-4	Yangel	61B-2	Glaisher		
		61B-3	Watts	65C-1	King
41D-1	Wallace	61B-4	DaVinci	65C-4	Zanstra
41D-2	Huxley				
		61C-1	Lawrence	65D-2	Katchalsky
42A-3	Banting	61C-2	Cameron	65D-3	Abul Wafa
42A-4	Linne	61C-3	Anville		
		61C-4	Secchi	66A-3	Rutherford
42B-3	Very				
42B-4	Sarabhai	62A-1	Yerkes	66B-4	Glauber

TABLE 1

66C-1	Fischer	80B-1	Morley	102B-2	Isaev
66D-2	Bergman	80B-2	Maclaurin	102B-3	Andronov
75C-1	Scheele	80B-4	Acosta	102D-1	Stark
75C-2	Norman	80C-1	Somerville	103A-1	Grave
75D-2	Winthrop	80D-2	Al-Marrakushi	103A-4	Raspletin
76C-1	Bonpland	81A-1	Rankine		
76C-2	Guericke	81A-2	Gilbert		
76D-1	Eppinger	81B-1	Haldane		
76D-2	Kuiper	81B-2	Runge		
77C-1	Albatengnius	81B-3	Widmännstatten		
77C-2	Halley	81B-4	Kiess		
77D-1	Davy	81C-1	Kreiken		
77D-2	Ammonius	81C-2	Houtermans		
78A-3	Alfraganus	82A-1	Purkyně		
78B-3	Torricelli	82A-2	Wyld		
78B-4	Hypatia	82A-3	Ludwig		
78C-1	Kant	82A-4	Hirayama		
78C-2	Mädler	82D-1	Brunner		
78D-1	Anděl	82D-2	Ganskij		
78D-2	Descartes	83C-1	Danjon		
79A-2	Leakey	83C-3	Dobrovolskij		
79A-3	Capella	83C-4	Delporte		
79A-4	Isidorus	83D-2	Sherrington		
79B-1	Lubbock	84D-4	Volkov		
79B-2	Messier	100C-1	Titius		
79B-3	Amontons	101B-1	Litke		
79B-4	Gutenberg	101B-2	Tsiolkovskij		
79D-1	Daguerre		Borealis		
79D-2	Gaudibert	101B-3	Tsiolkovskij		
80A-1	Geikie		Australis		
80A-2	Webb	101B-4	Babakin		
80A-3	Bilharz	101C-1	Neujmin		
80A-4	Lindbergh	101C-2	Waterman		
		102A-1	Patsaev		
		102A-4	Fesencov		

LUNAR TOPO-ORTHOPHOTOMAPS - 1:250,000

Abbot	62D-1	Davy	77D-1
Abul Wafa	65D-3	Dawes	42C-3
Acosta	80B-4	Delisle	39B-2
Albategnius	77C-1	Delporte	83C-4
Alfranganus	78A-3	Descartes	78D-2
Al-Marrakushi	80D-2	Deseilligny	42C-1
Ameghino	62D-3	Diophantus	39B-3
Ammonius	77D-2	Dobrovolskij	83C-3
Amontons	79B-3	Dubyago	62C-2
Anděl	78D-1		
Andronov	102B-3	Eckert	44D-3
Angström	39A-2	Erro	64D-2
Anville	61C-3	Eppinger	76D-1
Artsimovich	39B-4		
Auwers	60A-2	Fahrenheit	62B-1
Auzout	62B-4	Fedorov	39B-1
		Fesenkov	102A-4
Babakin	101B-4	Firmicus	62C-1
Banting	42A-3	Fischer	66C-1
Beer	41A-4	Fox	64D-3
Bessel	42D-2	Franck	43D-2
Bergman	66D-2	Freud	38B-3
Bilharz	80A-3		
Boethius	63D-1	Galen	41C-2
Bonpland	76C-1	Ganskij	82D-2
Bowen	41C-3	Gaudibert	79D-2
Brackett	42C-4	Geikie	80A-1
Brunner	82D-1	Gilbert	81A-2
		Glaisher	61B-2
Cajal	61A-1	Glauber	66B-4
Cameron	61C-2	Grave	103A-1
Capella	79A-3	Guericke	76C-2
Carmichael	43C-4	Gutenberg	79B-4
Cauchy	61A-3	Guyot	65A-3
Caventou	40A-1		
Clerke	42C-2	Hadley	41B-4
Condon	62C-4	Haldane	81B-1
Condorcet	62B-2	Halley	77C-2
Conon	41C-1	Heinrich	40B-4
Curtis	62A-2	Hill	43C-1
		Hirayama	82A-4
Daguerre	79D-1	Hornsby	42D-1
Daly	62D-2	Houtermans	81C-2
Danjon	83C-1	Humason	38B-1
Daubree	60A-1	Huxley	41D-2
DaVinci	61B-4	Hypatia	78B-4

TABLE 2

Isaev	102B-2	Prinz	39A-3
Isidorus	79A-4	Proclus	43C-3
		Pupin	40C-2
Jansen	60B-2	Purkyně	81A-1
Joy	41B-3		
		Rankine	81A-1
Kant	78C-1	Raspletin	103A-4
Katchalsky	65D-2	Recht	65B-4
Kiess	81B-4	Respighi	63D-4
King	65C-1	Runge	81B-2
Knox-Shaw	63C-1	Rutherford	66A-3
Kovalevskij	40B-3		
Kreiken	81C-1	Sampson	40B-1
Krieger	39A-1	Sarabhai	42B-4
Krogh	62B-3	Scheele	75C-1
Kuiper	76D-2	Schubert	63C-4
		Secchi	61C-4
LaHire	40A-4	Shapley	62A-3
Lambert	40A-3	Sherrington	83D-2
Landsteiner	40B-2	Smithson	62D-4
Lawrence	61C-1	Somerville	80C-1
Leakey	79A-2	Spurr	41A-3
leMonnier	43A-4	Stark	102D-1
Lindbergh	80A-4	Sulpicius Gallus	42D-4
Linne'	42A-4		
Litke	101B-1	Tachinni	63C-2
Littrow	43D-1	Tebbutt	62A-4
Lubbock	79B-1	Theophrastus	43D-3
Lucian	61A-2	Titius	100C-1
Ludwig	82A-3	Torricelli	78B-3
Lyell	61B-1	Tsiolkovskij	
		Australis	101B-3
Maclaurin	80B-2	Borealis	101B-2
Mädler	78C-2		
McAdie	64D-4	Väisälä	39A-4
McDonald	40A-2	Very	42B-3
Menelaus	42D-3	Vitruvius	43D-4
Messier	79B-2	Volkov	84D-4
Morley	80B-1		
		Wallace	41D-1
Neujmin	101C-1	Waterman	101C-2
Nielsen	38B-2	Watts	61B-3
Nobili	63D-3	Webb	80A-2
Norman	75C-2	Widmännstatten	81B-3
Nunn	64D-1	Winthrop	75D-2
		Wyld	82A-2
Patsaev	102A-1		
Peek	63C-3	Yangel'	41C-4
Peirce	44D-4	Yerkes	62A-1
Plinius	60B-1		
Pomortsev	62C-3	Zanstra	65C-4
		Zinner	38B-4

Example:

1°W is now 359°

2°W is now 358°, etc.

The medium scale (1:250,000) Lunar Orthophotomaps (LO) and Lunar Topographic Orthophotomaps (LTO) contain two grids:

(1) Geographic Coordinate System and (2) Lunar Transverse Mercator (LTM) Grid System.

1. Geographic Coordinate System

The origin of the system is referenced to the center of crater Mösting A (3°10'47" S latitude, 355°09'50" longitude)⁽¹⁾. Lines of longitude are numbered 0° to 360° east as referenced to the origin of longitude (NASA adopted this procedure for maps published after 1 May 1974); lines of latitude are numbered 0° to 90° progressively north and south from the lunar equator. On the face of the map each 1° interval is shown as a black line extending across the map, and labeled in the margin with its value. The southwest corner of each sheet is appropriately labeled with cardinal directions.

2. Lunar Transverse Mercator Grid System (LTM)

The LTM system consists of equally spaced parallel lines intersecting at right angles to form 10,000-meter squares. The

⁽¹⁾ Mösting A is the fundamental crater for selenographic measures. It is a small bright crater located closest to the center of the disk.

CONVERSION TABLE

1-359	37-323	73-287	109-251	145-215
2-358	38-322	74-286	110-250	146-214
3-357	39-321	75-285	111-249	147-213
4-356	40-320	76-284	112-248	148-212
5-355	41-319	77-283	113-247	149-211
6-354	42-318	78-282	114-246	150-210
7-353	43-317	79-281	115-245	151-209
8-352	44-316	80-280	116-244	152-208
9-351	45-315	81-279	117-243	153-207
10-350	46-314	82-278	118-242	154-206
11-349	47-313	83-277	119-241	155-205
12-348	48-312	84-276	120-240	156-204
13-347	49-311	85-275	121-239	157-203
14-346	50-310	86-274	122-238	158-202
15-345	51-309	87-273	123-237	159-201
16-344	52-308	88-272	124-236	160-200
17-343	53-307	89-271	125-235	161-199
18-342	54-306	90-270	126-234	162-198
19-341	55-305	91-269	127-233	163-197
20-340	56-304	92-268	128-232	164-196
21-339	57-303	93-267	129-231	165-195
22-338	58-302	94-266	130-230	166-194
23-337	59-301	95-265	131-229	167-193
24-336	60-300	96-264	132-228	168-192
25-335	61-299	97-263	133-227	169-191
26-334	62-298	98-262	134-226	170-190
27-333	63-297	99-261	135-225	171-189
28-332	64-296	100-260	136-224	172-188
29-331	65-295	101-259	137-223	173-187
30-330	66-294	102-258	138-222	174-186
31-329	67-293	103-257	139-221	175-185
32-328	68-292	104-256	140-220	176-184
33-327	69-291	105-255	141-219	177-183
34-326	70-290	106-254	142-218	178-182
35-325	71-289	107-253	143-217	179-181
36-324	72-288	108-252	144-216	180-180

TABLE 3

north-south grid lines are designated as "Easting" (E) lines and the east-west grid lines as "Northing" (N) lines. The primary value of the LTM system is that it enables a user to reference a discrete point on a map without plotting degrees, minutes, and seconds as with the Geographic Coordinate System.

The LTM grid system was developed by dividing the moon in 5° zones numbered consecutively 1 through 72 starting with Zone 1 at 180° - 185° , Zone 2 at 185° - 190° , etc. (Figure 5). The central meridian for each zone is assigned the coordinate value of 100,000 meters easting.

Example:

- The central meridian for Zone 1 is located midway between 180° and 185° or $182^{\circ}30'$ and has a coordinate value of 100,000 meters easting.
- The central meridian for Zone 2 is located midway between 185° and 190° or $187^{\circ}30'$ and has a coordinate value of 100,000 meters easting also.

The equator is assigned the coordinate value of 2,500,000 meters. The Northing lines increase in value going north from the equator and decrease in value going south from the equator.

The LTM grid is shown at 10,000-meter intervals by red tick lines emanating from the edge of the map (neatline). Each 10,000-meter tick is labeled with the full 10-kilometer value only (i.e., the central meridian for each zone is labeled 100, rather than

DIAGRAM OF LUNAR TRANSVERSE MERCATOR 5° ZONES

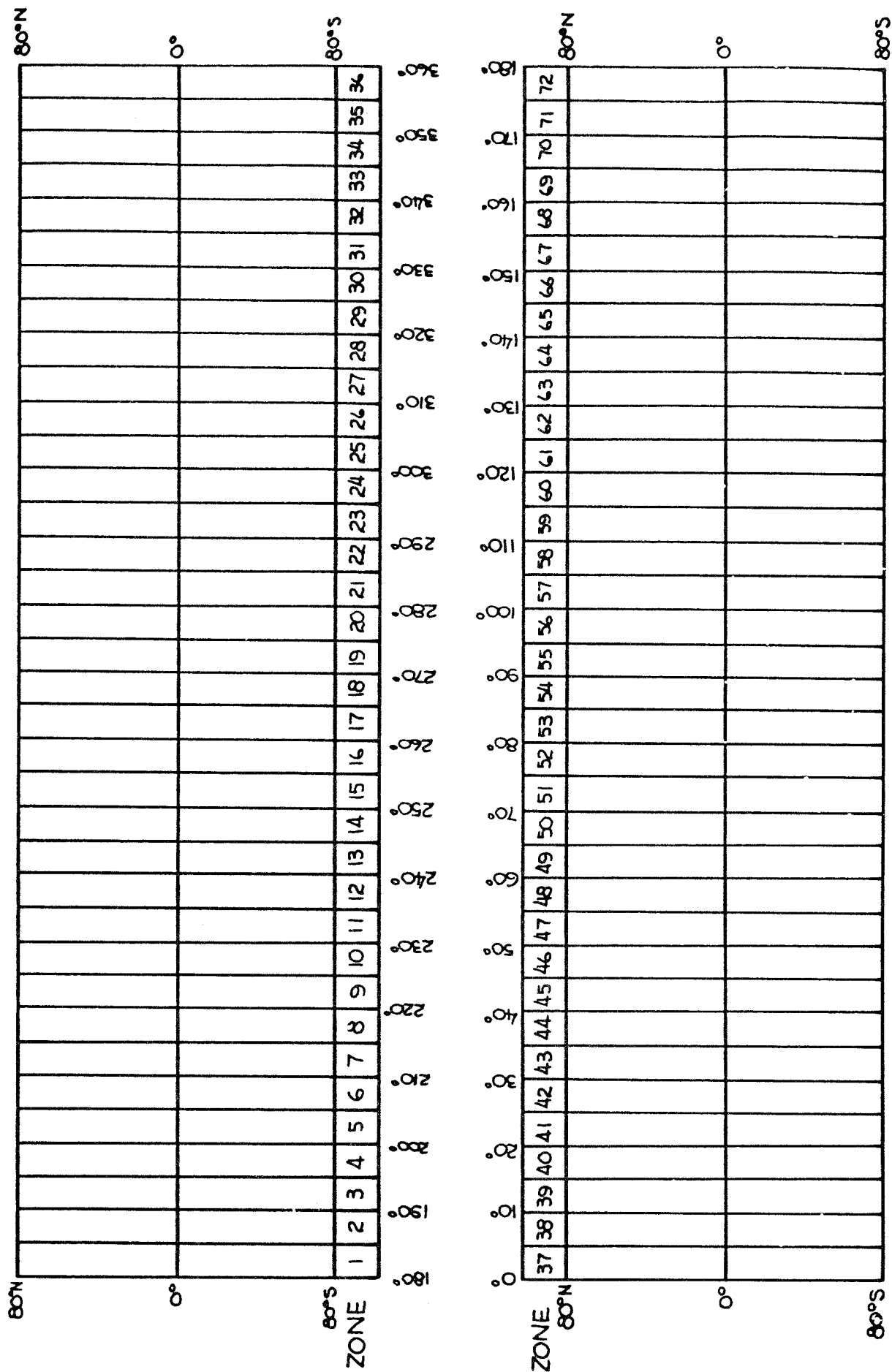


FIGURE 5

100,000). The first LTM grid tick in the southwest corner of each map sheet is shown with full meter values.

Instructions for computing LTM grid coordinates are printed in red on each LO and LTO published.

LUNAR NOMENCLATURE

Maps are one of the basic tools man uses to pass on information. In the case of earth maps we have navigation aids like roads, railroads, rivers, towns, etc. - on the moon we have holes, hills, cracks, rocks, etc.

It would be very difficult for me to write about "the 102.5 mile wide, black-floored crater, with the W-shaped central peak on the backside of the Moon" and have everyone understand which crater I was talking about.

Langrenus is credited as the first to assign names to lunar features (1645). By the year 1900, lunar nomenclature differed so greatly that no one understood it. In 1921, the newly formed International Astronomical Union (IAU) appointed a small committee to clarify the existing situation and to standardize the nomenclature.

When NASA started the 1:250,000 scale map program, it was obvious something would have to be done to increase the number of names. There were many instances of new maps falling between named features. In August, 1973, the IAU met in Sydney, Australia. The delegates were shown examples of the new maps and the problem

of additional names was discussed. Several new policies were adopted and are outlined here.

1. If a lunar feature is important enough to talk about, it should have a name.

2. In the past, lunar names were derived from deceased astronomers or scientists in related fields. The newly adopted policy permits the assignment of names of deceased writers, painters, composers, and other contributors to human culture and knowledge. Excluded are political, military, and religious figures, as well as modern philosophers. Table 4 lists the new lunar names approved by the IAU to date.

3. The system of lunar names also includes, to some extent, a means of classifying broad types of features. Anyone using lunar maps or charts is already familiar with terms like:

Mare (sea)

Oceanus (ocean)

Sinus (bay)

Lacus (lake)

Palus (marsh)

Montes (mountains)

Mons (peak)

Promontoria (cape)

Rupes (scarp)

Vallis (valley)

Rima - plural rimae (rilles)

Newly adopted classifications will be:

- Fossa (fossae) - Latin for trench or ditch --
will be used for relatively
straight graben.
- Anguis (anguis) - Latin for snake -- will be
used for sinuous rilles.
- Catena (catenae) - Latin for chain -- will be
used for crater chains.
- Dorsum (dorsa) - Latin for backbone -- will be
used for sinuous ridges.
- Ruina (ruinae) - Will be used for lunar land-
slides.

NEW LUNAR NAMES

This list contains new lunar names assigned by the Working Group for Lunar Nomenclature and approved by the IAU. These names appear on the 1:250,000 scale LTO's published to date.

<u>NEW NAME</u>	<u>OLD NAME</u>	<u>LOCATION</u>	<u>COMMENTS</u>
ABBOT	APOLLONIUS K	54.7°, 5.5°N	
ARTSIMOVICH	DIOPHANTUS A	323.4°, 27.6°N	
AVERY	GILBERT U	81.4°, 1.3°S	
BABAKIN	—	123.3°, 20.8°S	
BANTING	LINNE' E	16.4°, 26.6°N	
BLACK	KÄSTNER F	80.4°, 9.2°S	
BOREL	LE MONNIER C	26.4°, 22.4°N	
BOWEN	MANILIUS A	9.1°, 17.6°N	
BRACKETT	—	23.5°, 17.9°N	
CAJAL	JANSEN F	31.1°, 12.6°N	
CAMERON	TARUNTIUS C	45.9°, 6.2°N	
CARMICHAEL	MACROBIUS A	40.4°, 19.5°N	
CAVENTOU	LA HIRE D	330.6°, 29.7°N	
CLERKE	LITTROW B	29.8°, 21.7°N	
CURTIS	PICARD Z	56.8°, 14.5°N	
DALY	APOLLONIUS P	59.5°, 5.7°N	
DAUBREE	MENELAUS S	14.8°, 15.7°N	
DOBROVOLSKIJ	—	129.7°, 12.7°S	
DUBYAGO	DUBIAGO	70.0°, 4.0°N	Corrected spelling.
ECKERT	—	58.4°, 17.3°N	
ESCLANGON	MACROBIUS L	42.1°, 21.5°N	
FEDOROV	—	322.9°, 28.2°N	
FEUILLET	FEUILLEÉ	350.5°, 27.4°N	Old name, corrected spelling.
FOX	—	98.2°, 0.5°N	

TABLE 4

<u>NEW NAME</u>	<u>OLD NAME</u>	<u>LOCATION</u>	<u>COMMENTS</u>
FRANCK	RÖMER K	35.6°, 22.6°N	
FRANZ	PROCLUS D	41.0°, 17.4°N	Old name; re-located to more definite feature.
FREDHOLM	MACROBIUS D	46.5°, 18.3°N	
FREUD	—	307.6°, 25.8°N	
GALEN	ARATUS A	4.9°, 21.9°N	
GANSKIJ	GANSKY	97.0°, 9.6°S	Corrected spelling.
GARDNER	VITRUVIUS A	33.8°, 17.8°N	
GOLGI	SCHIAPARELLI D	300.1°, 27.7°N	
GREAVES	LICK D	52.8°, 13.2°N	
HADLEY	HADLEY C	2.8°, 25.5°N	
HALDANE	—	84.0°, 1.7°S	
HARGREAVES	MACLAURIN S	64.1°, 2.1°S	
HEINRICH	TIMOCHARIS A	344.6°, 24.8°N	
HILL	MACROBIUS B	40.8°, 20.9°N	
HORNSBY	ARATUS CB	12.5°, 23.8°N	
HOUTERMANS	—	87.4°, 9.4°S	
HUMASON	LICHTENBERG G	303.3°, 30.7°N	
HUXLEY	WALLACE B	355.5°, 20.2°N	
ISAEV	—	147.5°, 17.5°S	
JENKINS	SCHUBERT Z	78.1°, 0.4°N	
JOY	HADLEY A	6.6°, 25.0°N	
KATCHALSKY	—	116.1°, 5.9°N	
KIESS	—	84.1°, 6.3°S	
KNOX-SHAW	—	80.1°, 5.4°N	
KOVALEVSKIJ	TIMOCHARIS B	347.8°, 27.9°N	
KREIKEN	—	84.6°, 9.0°S	
KROGH	AUZOUT B	65.7°, 9.4°N	
LANDSTEINER	TIMOCHARIS F	345.2°, 31.2°N	
LAWRENCE	TARUNTIUS M	43.3°, 7.5°N	

<u>NEW NAME</u>	<u>OLD NAME</u>	<u>LOCATION</u>	<u>COMMENTS</u>
LIIOUVILLE	DUBIAGO S	73.6°, 2.7°N	Corrected spelling.
LITKE	LÜTKE	123.1°, 16.7°S	
LUCIAN	MARALDI B	36.8°, 14.3°N	
LYELL	PROCLUS A	42.2°, 13.3°N	
			Old name; re-located to more definite feature.
MCADIE	—	92.1°, 2.1°	
MCDONALD	CARLINI B	339.1°, 30.4°N	
MORLEY	MACLAURIN R	64.6°, 2.8°S	
NIELSEN	WOLLASTON C	308.2°, 31.6°N	
NOETHER	CAUCHY D	40.3°, 10.0°N	
PEEK	—	86.9°, 2.6°N	
POMORTSEV	DUBIAGO P	66.9°, 0.8°N	
PUPIN	TIMOCHARIS K	349.0°, 23.9°N	
RAMAN	HERODOTUS D	304.8°, 27.0°N	
RECHT	—	124.0°, 9.8°N	
RESPIGHI	DUBIAGO C	71.9°, 2.8°N	
RUNGE	—	86.8°, 2.5°S	
SAMPSON	—	343.5°, 29.6°N	
SANTOS-DUMONT	HADLEY B	4.7°, 27.8°N	
SARABHAI	BESSEL A	21.0°, 24.7°N	
SCHEELE	LETRONNE D	322.1°, 9.4°S	
SHAPLEY	PICARD H	56.8°, 9.4°N	
SHERRINGTON	—	118.1°, 11.1°S	
SPURR	ARCHIMEDES K	358.7°, 27.9°N	
STEWART	DUBIAGO Q	67.0°, 2.2°N	
SWIFT	PEIRCE B	53.4°, 19.3°N	
TACHINNI	NEPER K	85.9°, 5.0°N	
TEBBUTT	PICARD G	53.5°, 9.5°N	
THEOPHRASTUS	MARALDI M	39.1°, 17.5°N	
TOWNLEY	APOLLONIUS G	63.2°, 3.4°N	

<u>NEW NAME</u>	<u>OLD NAME</u>	<u>LOCATION</u>	<u>COMMENTS</u>
TOSCANELLI	ARISTARCHUS C	312.4°, 27.9°N	Corrected spelling.
TSIOLKOVSKIJ	TSIOLKOVSKY	129.0°, 20.0°S	
VÄISÄLÄ	ARISTARCHUS A	312.1°, 25.9°N	
VAN ALBADA	AUZOUT A	64.4°, 9.4°N	
VAN VLECK	GILBERT M	78.2°, 1.8°S	
VERY	LE MONNIER B	25.4°, 25.6°N	
VOLKOV	—	131.7°, 13.6°S	
WATTS	TARUNTIUS D	46.3°, 8.8°N	
WEIERSTRASS	GILBERT N	77.2°, 1.3°S	
WIDMANNSTÄTTEN	—	85.5°, 6.0°S	
YANGEL'	MANILIUS F	4.7°, 17.0°N	
ZANSTRA	—	124.8°, 2.9°N	
ZASYADKO	—	94.2°, 3.9°N	
ZINNER	SCHIAPARELLI B	301.1°, 26.6°N	